

Claims:

1. A viral vector expressing a nucleic acid encoding 5T4 antigen.
2. A vector according to claim 1 which is a poxvirus vector.
3. A vector according to claim 2 which is MVA.
- 5 4. An expression vector which encodes and expresses 5T4 antigen.
5. The vector according to claim 4 which is an entomopox virus vector.
6. The vector of claim 1 wherein said 5T4 antigen is non-human.
7. The vector of claim 6 wherein said non-human 5T4 antigen is a murine antigen.
- 10 8. The vector of claim 6 wherein said non-human 5T4 antigen is a canine antigen.
9. The vector of claim 1 wherein said 5T4 antigen is a modified 5T4 antigen.
10. The vector of claim 9 wherein said modified 5T4 antigen induces a CTL response an antitumor immunotherapeutic response or an antibody response to a tumor in a subject.
- 15 11. The vector of claim 9 wherein said modified 5T4 antigen comprises an HLA CTL peptide epitope of 5T4.
12. The vector of claim 9 wherein said modified 5T4 antigen is a human modified 5T4 antigen.

13. The vector of claim 11 wherein said modified 5T4 antigen is a human modified 5T4 antigen.

14. The vector of claim 11 wherein said modified 5T4 antigen comprises a peptide sequence selected from SEQ ID NOs: 5-17.

5 15. The vector of claim 9 wherein said modified 5T4 antigen comprises a peptide sequence selected from SEQ ID NOs: 18-27.

16. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 1 and a second poxvirus vector expressing a nucleic acid encoding a 5T4 antigen.

10 17. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 3 and a second poxvirus vector expressing a nucleic acid encoding a 5T4 antigen.

18. The pair of vectors according to claim 16, wherein said first viral vector is the priming vector and is an MVA vector.

15 19. The pair of vectors according to claim 17, wherein said first viral vector is the priming vector.

20. The pair of vectors according to claim 16, wherein said second viral vector is the boosting vector and is an entomopox virus vector.

20 21. The pair of vectors according to claim 17, wherein said second viral vector is the boosting vector and is an entomopox virus vector.

22. A method of priming and boosting an immune response to 5T4 antigen in a subject, said method comprising administering a pair of vectors according to claim 16 to said subject.

23. A method of priming and boosting an immune response to 5T4 antigen in
5 a subject, said method comprising administering a pair of vectors according to claim 17 to said subject.

24. A method of priming and boosting an immune response to 5T4 antigen in a subject, said method comprising administering a pair of vectors according to claim 20 to said subject.

10 25. A method of priming and boosting an immune response to 5T4 antigen in a subject, said method comprising administering a pair of vectors according to claim 21 to said subject.

26. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to
15 claim 6 and a second poxvirus vector expressing a nucleic acid encoding a 5T4 antigen.

27. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 9 and a second poxvirus vector expressing a nucleic acid encoding a 5T4 antigen.

28. A pair of vectors for priming and boosting an immune response to 5T4
20 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 11 and a second poxvirus vector expressing a nucleic acid encoding a 5T4 antigen.

29. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 12 and a second poxvirus vector expressing a nucleic acid encoding a 5T4 antigen.

5 30. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 16 and a second poxvirus vector expressing a nucleic acid encoding a 5T4 antigen.

31. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 16 and a second poxvirus vector expressing a nucleic acid encoding a 5T4 antigen.

10 32. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 1 and a second poxvirus vector expressing a nucleic acid encoding the same 5T4 antigen as the first vector.

15 33. A pair of vectors for priming and boosting an immune response to 5T4 antigen in a subject, said pair of viral vectors comprising a first viral vector according to claim 3 and a second poxvirus vector expressing a nucleic acid encoding the same 5T4 antigen as the first vector.